The Impact of Augmented Virtual Reality Technology on STEM e-learning

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The purpose of this project is to test and evaluate the influence of augmented virtual reality on the success and quality of the student learning STEM content. Also, develop a good e-learning environment and compare the learning of the student using an immersive virtual environment with non-immersive learning. It is used the latest technology to allow an effective and more natural experience, such as a head mounted display VR environment, high fidelity physics-based modeling and simulation platform (VOTE), and interfacing and interacting tools. There was a virtual environment already built in the Advanced Virtual Manufacturing Lab (AVML) teaching how to operate a CNC machine and the team is creating a new environment to be used with the Oculus Rift. There are some tools to make this, the Unreal Engine 4 and Unity was compared so it could be chosen the best tool. The team was divided in two for this task and the last one was selected, because was easier to convert the files .wrl into .fbx and work with them. The team came up with two interacting tools, keyboard or the 360 xbox controller. After created the environment it will be discussed what is the best. It will be created an evaluation rubric and survey and the group will conduct an experiment where the users will test the system. The data will be collected and compiled, thus, it will be analyzed in order to compare and evaluate the immersive with non-immersive environments.

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